

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Jim HUNTER, et al.)	Confirmation No: 2175
)	
Application No.: 10/050,994)	Group Art Unit: 2872
)	
Filed: January 22, 2002)	Examiner: Alessandro V. Amari

For: HIGH CONTRAST GRATING LIGHT VALVE

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' APPEAL BRIEF

Sir:

This Brief is presented in support of the Notice of Appeal, filed October 25, 2007, from the final rejection of Claims 1 and 3-10 of the above-captioned application, as set forth in the Final Office Action mailed June 26, 2007.

The requisite fee of \$510.00 for filing this Brief is concurrently being paid electronically.

A request for extension of time accompanies this response. The requisite fee of \$1,640.00 for a four-month extension of time is concurrently being paid electronically.

An oral hearing is requested. A separate request for oral hearing with the appropriate fee will be filed within two months of the Examiner's Answer.

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I. REAL PARTY IN INTEREST

The real party in interest is Cypress Semiconductor Corporation, the assignee of the application in on appeal.

II. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences or judicial proceedings that may be related to, directly affect, be directly affected by, or have some bearing on the Board's decision.

III. STATUS OF CLAIMS

Claims 1 and 3-10 are rejected. The claims pending on appeal are Claims 1 and 3-10. A copy of the claims is attached hereto as the Claims Appendix.

IV. STATUS OF AMENDMENTS

Claims 1-10 were originally filed in the current application on January 22, 2002. In the Office Action mailed July 22, 2003, the Examiner rejected Claims 1-10. Claim 2 was cancelled and Claims 1, 4, 5 and 10 were amended in Applicants' Amendment filed January 22, 2004. In the Office Action, dated June 29, 2004, the Examiner's finally rejected Claims 1 and 3-10. The claims were not amended in Applicants' Request for Reconsideration filed December 29, 2004. The Examiner mailed an Advisory Action on January 12, 2005. The claims were not amended in Applicants' Request for Reconsideration, filed with the Request for Continued Examination on May 28, 2005. In the Office Action mailed November 2, 2005, the Examiner rejected Claims 1 and 2-10. The claims were not amended in Applicants' Request for Reconsideration filed April 27, 2006. In the Office Action dated July 11, 2006, the Examiner finally rejected Claims 1 and 3-10. A Notice of Appeal and Extension of time were filed by Applicants on January 11, 2007. The claims were not amended in Applicants' Response to Final Office Action filed with the Request for Continued Examination on April 10, 2007. In the Office Action mailed June 26, 2007, the Examiner finally rejected Claims 1 and 3-10. A Notice of Appeal and Extension of Time were filed by Applicants on October 25, 2007.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The invention relates to a reflective light processing element including a substrate a substrate, a dielectric layer formed on the substrate, and a conductive trace. The conductive trace is formed on the dielectric layer, allowing charges trapped at the dielectric layer to escape. The trapped charges are present at least on the surface of the dielectric layer. A plurality of ribbons are formed above the substrate and the conductive trace. A plurality of ribbons are formed above the substrate and the conductive trace. Each of the ribbons comprises a top surface that is reflective and the reflective surfaces exhibit the same degree of reflectivity. This device provides a high contrast grating light valve including a silicon substrate, a protective dielectric layer formed on the substrate, and a first set of ribbons. The first set of ribbons each has a first average width W_a and a second set of ribbons each with a second average width W_b . The ribbons of the first set alternate between the ribbons of the second set and one set of either the first or second set of ribbons is configured to move relative to the other to constructively and destructively interfere with an incident light source having a wavelength X . The substrate includes a silicon wafer protected by a dielectric layer and a conductive trace formed at least partly on the protective layer and in electrical contact with the substrate, allowing charges trapped on the protective layer to escape.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 3-8 and 10 stand rejected under 35 U.S.C. § 102(e) as purportedly being anticipated by United States Patent No. 6,233,087 (**Hawkins et al.**).

Claim 9 stands rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over **Hawkins et al.** in view of United States Patent No. 5,311,360 (**Bloom et al.**).

VII. ARGUMENT

Respectfully, the Examiner has misconstrued the nature of the requirements of 37 C.F.R. § 1.131, changing a preference for dated documentation into a requirement, insisting on independent corroboration of the testimony of the inventors, and imposing an unreasonable burden of proof. Applicants have not had to deal with the rejection on its merits, *as the principal reference cited, Hawkins is NOT prior art*. As the secondary reference cited does not compensate for these failings, the rejection is unsupported, and should be reversed.

A. Rejection of Claims 1, 3-8 and 10 under 35 U.S.C. § 102(e), as being anticipated by Hawkins et al.

U.S. Patent 6,233,087, **Hawkins** is a reference available only pursuant to 35 U.S.C. §102(e). The current application enjoys an effective filing date of March 8, 2001. **Hawkins**, filed December 18, 1998 did not issue until May 15, 2001. Accordingly, if Applicants can demonstrate a date of invention in advance of December 18, 1998, the rejection must fail. It is respectfully submitted that the weight of the evidence (Appellant's burden herein is merely a preponderance of the evidence – the burden rests on the examiner to come forward with a prima facie case of unpatentability, and the burden then shifts to the applicant to rebut that evidence. *In re Piasecki*, 223 USPQ 785, 788 (Fed. Cir. 1984).

Applicants, Appellants herein, rely on five separate Declarations, by both inventors and non-inventors alike, that establish that the subject matter of the claims of the invention was conceived of by the inventors, and reduced to practice – that is, it was tested and shown to work for its intended purpose (modulation of the reflection of incident light) prior to the critical date of December 18, 1998. There does not appear to be any dispute that the invention was conceived of

or made prior to the date of the reference – the sole basis for the Examiner's position is there is not a single record dated in advance of December 18, 1998, that demonstrates testing of the prepared device. As is discussed below, the overwhelming weight of the evidence demonstrates Applicant's timely made and tested the device. That evidence was presented in the course of prosecution in the form of several Declarations, discussed in turn below.

Declaration of the Inventors of January, 2004

Reliance is had on the Declaration of the inventors submitted January 22, 2004. In it, the inventors, relying on dated records, demonstrate not only a summary of the invention in written form (Exhibit A to that declaration) and actual notebook records of the processing employed to make the invention (Exhibit B to that declaration). The inventors state that the device was made before December 18, 1998 and rely on Exhibit C as a dated cross-sectional representation of that device. The Declaration specifically notes, ¶ 8, that it was necessary to develop a new etching process to make the invention, and identifies the process as reflected in Exhibit D, again, records dated in advance of the reference. The device made is illustrated in Exhibit E to that Declaration. Unquestionably, the device of the claims was conceived of, made and tested, as evidenced by documentary records comprised of Exhibits A – D all dated prior to the effective date of **Hawkins**, and Exhibit E, not dated, but sworn to by the inventors to have been prepared by to that date. Declaration, ¶ 9. This allowed the inventors to conclude they had conceived of the invention, and reduced it to practice, prior to the 102(c) date of **Hawkins**.

Declaration of Berger of January, 2004

Although corroboration of prior invention pursuant to Rule 131 is not required, *LeVeen v.*

Edwards, 57 USPQ2d 1416, 1421 (BPAI 200) Applicants herein provide the same. Joe Berger

was in a position to observe not only the inventors, but to be familiar with their work.

Declaration of Berger of January, 2004, at ¶ 2. Berger testified that in fact the work reported – the conception of the invention of the claims, its preparation and testing, was all completed prior to December 18, 1998. More is not required for antedation.

Declaration of Hunter of July, 2005

In response to an Advisory Action which indicated, page 2, that the Examiner maintained the subject matter described in the Declaration of the inventors and Berger were inadequate because they failed to show several features (Advisory Action of 1/12/2005) Appellants continued prosecution and submitted the Declaration of Hunter, one of the inventors, of July, 2005. In that Declaration, Hunter first states the invention was successfully shown to alter reflected light by movement of conditions from constructive to destructive interference. ¶ 4. Hunter then discusses in detail a “runsheets” a document maintained at the place of invention (originally, Silicon Light Machine, later acquired by Cypress Semiconductor) prior to December 18, 1998, which shows every step undertaken to make the invention. This is Exhibit A to this declaration. To demonstrate that in fact each feature of the invention is reflected in the device made and tested at SLM prior to December, 1998, Hunter himself prepared Exhibit B, which is a spreadsheet demonstrating the correlation between the recited features of the invention of the claims and the individual processing steps of Exhibit A. Hunter discusses how each feature of the invention is made. ¶¶ 6 – 10. In paragraph 11 of this Declaration, Hunter testifies:

Moreover, as tested to the satisfaction of myself and my co-inventors, these grating light valves were shown to modulate the amount of light reflected by them from a light source, thereby demonstrating that the grating light valves made prior to August 11, 1989 (sic,

1998) by myself and co-inventors, in fact “worked for the intended purpose” in that they showed utility as grating light valves.

The testimony of Hunter is neither challenged by the Examiner as unreliable, or subject to rebuttal evidence of any type. The Examiner maintained the rejection over **Hawkins**, notwithstanding the testimony of the inventors, arguing “The Applicants provided no evidence of testing or other facts (other than a general statement in the declaration) that the device operates as intended.” Office Action of November 2, 2005 at p. 10. Clearly, this is not the case – beyond establishing that the device alters the amount of incident light reflected, established by competent testimony, there is nothing else to prove. But Applicants endeavored to provide further evidence.

Declaration of Hunter and Amm of April, 2007

The sole basis for the Examiner’s rejection of the claims was an absence of documentary records dated in advance of December 18, 1998, showing the testing the inventors had already testified to. The Declaration of Hunter and Amm established, ¶ 4, that the records of the Assignee, and the predecessor-in-interest, had been thoroughly searched, but had not unearthed a record that could positively be shown to correspond to actual testing conducted prior to December 18 1998, although Amm and Hunter in fact testified that they did indeed do such testing at that time! ¶ 5. The Declaration attached, as Exhibit A, the actual records of the type of testing conducted. In an excess of caution, the inventors confirmed that testing of this type, and results such as those reflected in Exhibit A, was done and were obtained, prior to December 18, 1998, but they could not be absolutely certain that in fact the testing shown correlated with a test conducted at that date. The necessary documentation is missing. ¶ 6. Nonetheless, the inventors testified:

It is reflective of testing that did occur, as we recall, prior to December 1998

at Silicon Light machine.

Declaration, ¶ 5.

Declaration of Webb

Appellants also submitted, and rely on herein, the Declaration of Webb of April, 2007. Douglas Webb was responsible for the design and type of testing reflected by Exhibit A in the time preceding December, 1998, at the assignee. ¶¶ 1 -2. Webb was intimately familiar with the testing reflected – he did it! Referring to Exhibit A (test results) to the Declaration of Hunter and Amm, Webb testified:

It is certainly reflective of the kind of testing done, prior to December 1998, testing that demonstrated modulation of reflected light in response to application of electric fields, and dissipation of charge built up in the dielectric layer through the provision of a conductive trace on that layer. This was a device successfully tested at Silicon Light Machines, prior to December, 1998. The testing was conducted, to the best of my memory, as part of a program to determine whether such devices could be developed for commercial practice.

Declaration of Webb, ¶ 3. This is hardly a summary statement that the invention was shown to work for its intended purpose.

The Rejection Appealed From

The sole basis for the Examiner's maintenance of the rejection appears at page 2 of the Office Action appealed from:

None of the Exhibits provided in the declaration (sic, declarations) provide any test results or other demonstrable facts to show that the device will work for its intended purpose.

At page 8 of the Office Action of June 26, 2007, the Examiner decries what he refers to as a lack of “objective evidence.”

Respectfully, Applicants have submitted detailed explanations of how the invention was made and tested, prior to the critical date, and submitted actual “objective” records that reflect the exact type of testing, that occurred, according to their sworn testimony, prior to December, 1998. More is not required. It is true that where possible, original records or copies should be submitted. And Applicants have done just that – submitting documents that predate the reference showing the actual preparation of the device, the method and type of its testing, and the results obtained. What Applicants have not been able to do is present a single piece of documentation with a date in advance of December 18, 1998 that reflects all this. The law does not demand the same. Where the records have been searched, and, due to an intervening acquisition, the documents are missing – but the exact type of documents are advanced and the testimony of inventors and non-inventors alike is the same – this testing actually took place, with this kind of result, in advance of December, 1998, there is no basis to gainsay it. The “evidence” in a showing under Rule 131 is the testimony advanced – the documents, when available, are confirmatory in nature.

The law recognizes that there may be instances where the models, devices and notes kept are lost. When this happens, what is required is clarity in the Declarations. The rejection is not maintained because all the Applicants have advanced is a broad statement that the invention was

tested and shown to work for its intended purpose, or that it was reduced to practice. Applicants have shown, by exhibit, the Examiner's so-called objective evidence, exactly what was made, what was done, how it corresponds to the claims, and the results obtained. Indeed, even the reason why testing was being conducted is given. Under these circumstances, where the explanation that the requisite dated document is simply unavailable is given, the testimony, here corroborated by non-inventors, must be measured and accepted. The Examiner's refusal to accept the detailed and reasonable testimony of the inventors and corroborators, without basis, undermines the rejection and is not in accordance with the law. This has been part of our law for more than 100 years. *Ex parte Donovan*, 1890 C.D. 109. Where an Applicant for patent advances testimony that he and his inventors made and reduced the invention to practice – advances dated documents demonstrating exactly what was done, testifies that the kind of testing reflected in documents was in fact done prior to the effective date of the reference – the Examiner is not free to contradict the testimony of the inventors and corroborators. This is not an interference – the Examiner is not an advocate. *Ex parte McGuckian*, 202 USPQ 398, 399 – 400 (BPAI 1975).

The overwhelming weight of the evidence demonstrates the invention was made prior to the inventive date of **Hawkins**. There is clear, dated, evidence testified to by the inventors and Berger that in fact the invention was conceived of, and made, by the inventors and those working with them, before December 18, 1998. This the Examiner does not question. The inventors, and corroborator/tester Webb, have provided "objective evidence" in the form of documents to show what kind of testing was done, and what type of results were obtained, and why. While the witnesses are not absolutely certain that the specific documents submitted reflect a test conducted before December 18, 1998, they do testify that they are absolutely certain that kind

of testing, and those kind of results, were in fact done and obtained, prior to December 18, 1998.

Respectfully, the Examiner is not free to disregard that compelling testimony.

The rejection of claims 1, 3-8 and 10 as anticipated should be reversed.

B. Rejection of Claim 9 under 35 U.S.C. § 103(a)
As being unpatentable over Hawkins et al. in view of Bloom et al.

The rejection of Claim 9 must fail for the same reasons the rejection of Claims 1, 3-8 and 10 for anticipation fails. **Hawkins**, a prerequisite for this rejection, is not available as prior art against Applicant's claim. This rejection should be reversed on the same basis that the rejection of claims 1, 3 – 8 and 10 should be. The same is respectfully requested.

VIII. SUMMARY

On the basis of the foregoing, Appellants submit that the subject matter claimed has been shown to have been conceived and reduced to practice prior to the effective date of the primary reference, **Hawkins**. By testimony and contemporary records, Applicants have shown, and had their testimony corroborated, that they made the invention claimed before the effective date of the reference, and tested it, showing it to be effective for its intended purpose, before the effective date of the reference. The reference is not available as prior art, and rejections based thereon should be reversed.

Please charge any additional fees due or credit any overage to Deposit Account 10-0233.

Respectfully submitted,

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IX. CLAIMS APPENDIX

1. A reflective light processing element, comprising:
 - a substrate;
 - a dielectric layer formed on the substrate;
 - a conductive trace formed on the dielectric layer, the conductive trace allowing charges trapped at the dielectric layer to escape wherein said trapped charges are present at least on the surface of the dielectric layer; and
 - a plurality of ribbons formed above the substrate and the conductive trace.
2. (Canceled)
3. The reflective light processing element of claim 1, where said trapped charges are formed, with respect to the dielectric layer, during operation of said reflective light processing element.
4. A reflective light processing element, comprising:
 - a substrate;
 - a dielectric layer formed on the substrate;
 - a conductive trace formed on the dielectric layer, the conductive trace allowing charges trapped in the dielectric layer to escape; and
 - a plurality of ribbons formed above the substrate and the conductive trace, wherein each

of said ribbons comprise atop surface that is reflective and said reflective surfaces exhibit the same degree of reflectively.

5. A high contrast grating light valve comprising a silicon substrate;

a protective dielectric layer formed on the substrate;

a first set of ribbons each with a first average width W_a and a second set of ribbons each with a second average width W_b , wherein the ribbons of the first set alternate between the ribbons of the second set and, one of said first and second set of ribbons is configured to move relative to the other to constructively and destructively interfere with an incident light source having a wavelength X ;

wherein said substrate comprises a silicon wafer protected by a dielectric layer and a conductive trace formed at least partly on the protective layer and in electrical contact with said substrate, allowing charges trapped on the protective layer to escape, wherein each of said first and second set of ribbons comprises a top surface which is reflective, and said reflective surfaces exhibit the same degree of reflectivity.

6. The grating light valve of Claim 2, wherein said dielectric layer comprises silicon dioxide.

7. The grating light valve of Claim 2, wherein said conductive trace is comprised of aluminum.

8. The grating light valve of Claim 2, wherein width W_a is $\leq W_b$.

9. The grating light valve of Claim 2, wherein the top surfaces of the ribbons in said first set and the top surfaces of the ribbons in said second set and regions of the surface between the ribbons of the first set and second set have reflective surfaces.

10. The grating light valve of Claim 9, wherein the reflective surfaces comprise aluminum.

X. EVIDENCE APPENDIX

The following is a list of references entered by the Examiner and/or relied upon by Appellant in this appeal, along with a statement setting forth where in the record that evidence was entered by the Examiner and/or the Appellant. Copies of each piece of evidence are provided herewith.

REFERENCE	LOCATION IN THE RECORD
Hawkins, et al. (U.S. Patent 6,233,087) (Exhibit A hereto)	Office Action of July 22, 2003
Bloom, et al. (U.S. Patent 5,311,360) (Exhibit B hereto)	Information Disclosure Statement of August 19, 2002
Declaration of Inventors (filed Jan. 22, 2004) (Exhibit C hereto)	Amendment of January 22, 2004
Declaration of Joe Berger (January, 2004) (Exhibit D hereto)	Amendment of January 22, 2004
Declaration of Hunter (July, 2005) (Exhibit E hereto)	Response of August 17, 2005
Declaration of Hunter and Amm (April, 2007) (Exhibit F hereto)	Response of April 10, 2007
Declaration of Webb (April, 2007) (Exhibit G hereto)	Response of April 10, 2007

XI. RELATED PROCEEDINGS APPENDIX

NONE.